

**Subject:** Joint webinar Division de Chimie du Solide – SCF / Division of Solid State and Materials Chemistry – EuChemS. Time: Thursday 14th March 2024 01:30 PM Paris-time

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## Mirela Dragomir

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### Synthesis and Crystal Growth of Geometrically Frustrated Magnets

Most magnetic materials exhibit long-range magnetic order at low temperatures. However, in geometrically frustrated magnets, the topology of the lattice prevents long-range magnetic order down to temperatures close to absolute zero, leading to a strong degeneracy of the ground state. Low-dimensional quantum spin systems that exhibit geometric frustration are of particular interest, as the frustration in these systems is believed to be closely linked to the emergence of exotic states of matter, such as superconductivity. Although they have intriguing magnetic properties, the physical realization of such systems is still scarce and they are poorly understood. In my talk, I will present several compelling examples of materials that crystallize with magnetic lattices that are geometrically or topologically prone to frustration, and talk about our efforts to synthesize new phases and grow them as single crystals.

#### Brief CV Mirela Dragomir:

Dr. Mirela Dragomir completed her Ph.D. in Slovenia then moved to Canada for a postdoctoral fellowship on frustrated magnetism with prof. John E. Greedan at McMaster University. She then returned to Slovenia as a Marie Skłodowska-Curie Individual Fellow and co-founder of the Extreme Conditions Chemistry Laboratory, ECCL. She currently works at the Jožef Stefan Institute as a Research Associate and is an Assistant Professor at the Jožef Stefan International Postgraduate School. Her main research interests cover structure-properties relationship in inorganic materials such as oxides and fluorides, as well as mechanochemical synthesis and crystal growth of quantum materials.

She is also an Associate Editor of Acta Chimica Slovenica for the Inorganic and Materials Science section, the President of the Committee for the Slovenian Chemical Society (SKD) Awards and the Secretary of the Division of Solid State and Materials Chemistry for the European Chemical Society (EuChemS).